ALFA BELGORE REHABILITATION PROJECT

1.0 SCOPE OF WORK

1.01 SCOPE OF WORK (General Engineering Context)

- **Project Planning and Design** which involves establishing broad project characteristics such as Cost Estimation (BEME), Site events and Activity Scheduling, Risk Analysis, working drawings and specifications.

- **Preparation of site for Rehabilitation** which includes Site clearing and security

- **Procurement of materials** (Ordering, expending and delivering of key project equipments and materials)

- **Implementation & Construction** which involves the operations of power, resources and supervision to execute the rehabilitation project.

- **Handover:** Passing the facility into the control of the principal. This includes formal handover of the facilities, user training, operating and maintenance documentation

1.02 SCOPE OF WORK (For an Ongoing Rehabilitation Project)

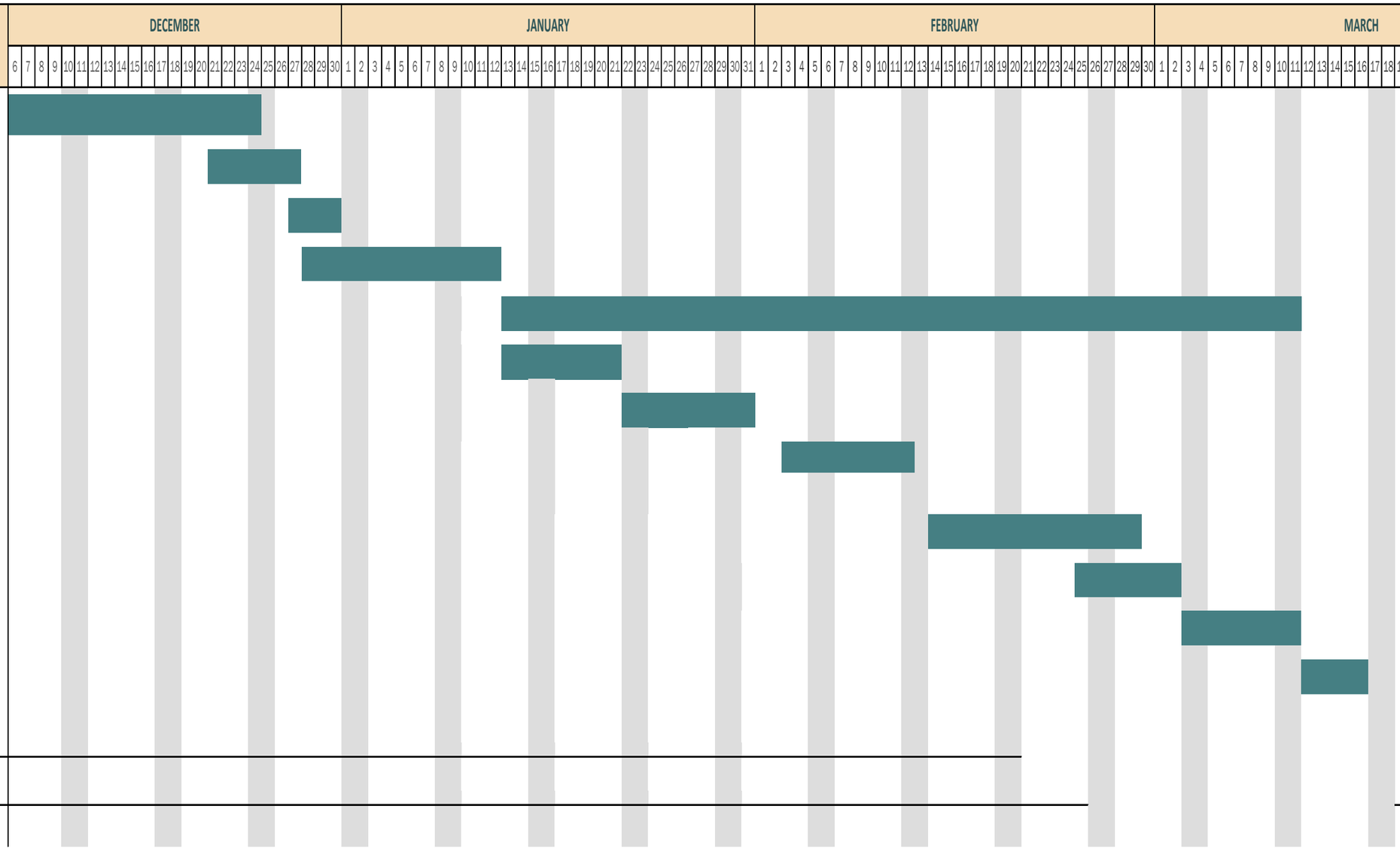
This may also mean you are required to highlight the various works and operations carried out in the project. The work tasks includes although not limited to:

- Demolishing, Dismantling and Preparing (Site clearing and security, removing all non-functional fittings.)
- Concrete & Block Works
- Plastering Works (Patch all walls and trim in preparation for paint)
- Replacement of Doors, Windows, Metal Works, and Suspending Ceilings
- Plumbing & Sanitary Works
- Air Conditioner Works
- Electrical Works. (outlet power repairs and rewiring, Replace Light/fan fixtures, Switch plate covers)
- Tiling and Marble Works
- Painting Works (Repaint entire interior and exterior.

2.0 GANTT CHART

ALFA BELGORE REHABILITATION PROJECT

ACTIVITY	START DATE	DURATION	END DATE
Planning phase	6/Dec/19	18	24/Dec/19
Site preparation	21-Dec-19	7	27/Dec/18
Site clearing	27-Dec-19	4	30/Dec/19
Procurement of Materials	28-Dec-19	14	12/Jan/20
Operations & Construction	13-Jan-20	60	11/Mar/20
Concrete & Blockwork	13-Jan-20	9	21/Jan/20
Plastering	22-Jan-20	10	31/Jan/20
Replacement of Doors, Windows & ceilings	3-Feb-20	9	12/Feb/20
Mechanical/Electrical repairs	14-Feb-20	16	29/Feb/20
Floor and Tile replacement	26-Feb-20	8	2/Mar/20
Painting	3-Mar-20	9	11/Mar/20
Handover	12-Mar-20	5	17/Mar/20

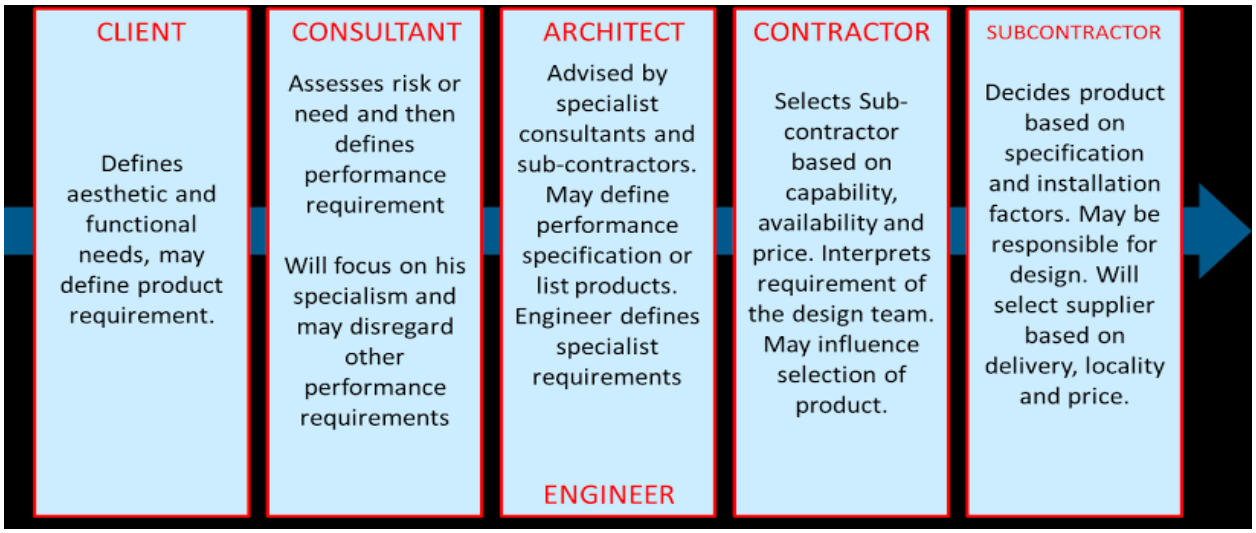


3.0 HUMAN RESOURCES

The people resource requirement for this project are as follows

- Project/Construction manager
- Architect
- Engineers/ Consulting Engineers
- Finance Manager
- Contractor
- Subcontractor
- Operations Manager
- Construction Workers

The image below further explains individual roles, also constituting the project team. The lead consultant is the Architect, however this is not necessarily the case and appointment documents for other consultants will generally offer provision for them to be nominated as lead consultant.



4.0 REASONS SITE WAS SECURED

Construction site security was necessary for preventing a number of serious issues, including:

THEFT

This was done to prevent theft of Fuel, expensive materials and equipments which could disrupt work operations if unavailable. Patrol routes, site risks, perimeter boundaries and hot spots were identified and prioritized when taking site security measures.

ARSON

The site was secured to prevent deliberate damage or arson which generally could have been carried out by individuals who just want to cause damage and destruction. Over 40% of all fires on construction sites are started deliberately. This costs the industry an estimated 200 million Naira a year in lost earnings, insurance premium increases and compensation packages. Unfortunately, arson is not only dangerous because of the loss of property and assets, but also for lives it is important that security measures are taken to prevent it.

VANDALISM

An unsecured construction site is a playground for vandals and thieves. Vandalism to property or equipment and/or theft of building supplies and tools can be extremely costly. Copper pipes, air conditioning units, water heaters, shingles, and even trailers left on construction sites (among other supplies, tools, and assets) may be a temptation for vandals or thieves. Between the construction equipment on site, and the investment of the construction project, construction site security should be a priority.

5.0

Alfa BELGORE REHABILITATIO PROJECT (B.E.M.E)					
NO	**DESCRIPTION**	**UNIT**	**QTY**	**RATE**	**AMOUNT (Naira)**
1	Site clearing	LS			200,000
2	Mass Concrete (1:3:6) concrete works	m^3	2	32,500	65000
3	440 x 215mm Hollow block	Pcs	50	250	12500
4	External and Internal Plastering 120mm thick, C/S mix 1:6	m^3	5	12,500	62500
5	water	litre	1000	5	5000
6	Roofing Sheets 0.55mm	m^2	10	2600	26,000
7	Panel doors (2.0m x 0.9m) single leaf, complete with hinges & locks	Pcs	3	60000	180,000
8	Re-Bar Y12	Pcs	10	1900	19,000
9	Window Glass	m^2	5	10000	50,000
10	Plumbing Works	LS			150,000
11	Electrical installation works	LS			250,000
12	Tiles and Marbles	m^2	100	2500	250,000
13	Emulsion paint	litre	50	23,000	1,150,000
14	Gloss paint	litre	20	36,000	720,000
	TEC				**3,140,000**
	Miscellaneous	%	10		314,000
15	Consultancy Fee	%	15		471,000
16	Transport cost	%	12		376800
17	Site clearing after Completion	%	5		157000
18	Profit	%	20		628000
	OVERALL PROJECT COST				**5,086,800**

6.0

BILL PAYMENT SCHEDULE

Bill Payment Schedule

Due On	Pay On	Notes	Recipient(s)	Amount	Jan	Feb	Mar	Apr
N/A	1st		Tithe	$450.00	X	X		
14th	1st		Student Loan	$85.00	X	X		
9th	1st		Internet Access	$40.00	X	X		
13th	1st		AT&T Phone Bill	$20.00	X	X		
N/A	1st		Vacation Fund	$100.00	X	X		
N/A	1st		Emergency Fund	$150.00	X	X		
10th	1st		Gas	$50.00	X	X		
12th	1st		Water Bill	$40.00				
16th	1st		Trash Bill	$15.00				
			Total for 1st check	$950.00				
24th	15th		Cell Phone	$70.00	X	X		
4th	15th		Car Loan	$200.00	X	X		
2nd	15th		Credit Card	$35.00	X	X		
1st	15th		Mortgage or Rent	$600.00	X	X		
26th	15th		Electric	$50.00	X	X		
3rd	15th		Renters Insurance	$10.00	X	X		
2nd	15th		Car Insurance	$85.00	X	X		
			Total from 2nd check	$1,050.00				
			Monthly Total	2,000.00				

7.0 BEME

Bill of Engineering Measurement and Evaluation (BEME) is a tool used before, during and post-construction to assess and value the cost of construction works. This includes the cost of materials, labor, equipments and all/any other resources required for the success of any construction endeavor based on predetermined scope and specification. BEME is used extensively for engineering works such as drainages, retailing walls, piling, underpinning, bridges and Culverts, rail works dams etc.

7.1 DEFECT LIABILITY PERIOD

A defects liability period is a set period of time after a construction project has been completed during which a contractor has the right to return to the site to remedy defects. A typical defects liability period lasts for 12 months (typically lasts six to twelve months). The defects liability period begins upon certification of practical completion and

During this period, the client reports any defects that arise to the contract administrator who decides whether they are defects (i.e. works that are not in accordance with the contract), or whether they are in fact maintenance issues. If the contract administrator considers they are defects, then they may issue instructions to the contractor to make them good within a reasonable time. At the end of the defects liability period, the contract administrator prepares a schedule of defects, listing those defects that have not yet been rectified, and agrees with the contractor the date by which they will be rectified. The contractor must in any event rectify them within a reasonable time.

When the contract administrator considers all the items on the schedule of defects have been rectified, they issue a certificate of making good defects. This has the effect of releasing the remainder of any retention and results in the final certificate being issued. The certificate could render the contract administrator liable for problems that this causes for example in the calculation of liquidated damages.

7.2 LEAD CONSULTANT

The lead consultant is the consultant that directs the work of the consultant team and is the main point of contact for communication between the client and the consultant team, except for on significant design issues where the lead designer may become the main point of contact.

The lead consultant's role might include:

- Coordinating, monitoring and reviewing the work of the consultant team (and others, such as specialist designers and specialist contractors).
- Arranging consultant team meetings and planning work stages.
- Preparing program and progress reports.

- Seeking instructions from the client.
- Advising the client on the need to appoint additional advisers, consultants or specialist designers.
- Establishing change control procedures at key stages, for example when the project brief is frozen or when detailed design is frozen.
- Arranging value management exercises.
- Advising the client on the choice of contract and contract conditions.
- Assist the client in defining selection criteria for contractors and preparing pre-qualification questionnaires.
- Coordinating the review of tenders.

7.3 PROJECT LIFE CYCLE

A project life cycle is the sequence of phases that a project goes through from its initiation to its closure. The number and sequence of the cycle are determined by the management and various other factors like needs of the organization involved in the project, the nature of the project, and its area of application. The phases have a definite start, end, and control point and are constrained by time. The project lifecycle can be defined and modified as per the needs and aspects of the organization. Even though every project has a definite start and end, the particular objectives, deliverables, and activities vary widely. The lifecycle provides the basic foundation of the actions that has to be performed in the project, irrespective of the specific work involved.

Some important phases of project life cycle are:

- The Initiation Phase: **Starting of the project**
- The Planning Phase: **Organizing and Preparing**
- The Execution Phase**: Carrying out the project**
- The Termination Phase**: Closing the project**

7.4 ENVIRONMENTAL IMPACT ASSESMENT (EIA)

The Environmental Impact Assessment involves a systematic process for identifying, predicting and evaluating potential impacts associated with a development project. The EIA process must proffer mitigation measures to avoid, reduce or minimize the negative impacts on the environment, public health and property and may highlight the foreseeable positive impacts.

The EIA is not a one-off process which terminates in the production of a report on the effects of the project and associated mitigation measures. It also deals with monitoring the construction and operational phases, and this continues till the project is decommissioned. The post-closure care is also an integral part of the EIA process.

The main objectives of the EIA are to:

- Establish the existing bio-geo-physical and socio-economic conditions of the project area.
- Identify the resultant impacts (positive and negative) associated with the installation and operation of the project.
- Make recommendations to eliminate/mitigate/control the magnitude and significance of the identified impacts.
- Recommend plan and procedures to manage the consequences and
- To integrate the views and opinions of stakeholders, National and International environmental regulations, codes and conventions relevant to the proposed dam activities into the final project design from the EIA report Review.